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EXAMINER	
HICKS, CHARLES V	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/586,447	NAKADAIRA ET AL.	
	Examiner	Art Unit	
	CHARLES HICKS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,5-8,12,13,16-18,20 and 21* is/are pending in the application.

4a) Of the above claim(s) *5-8,12,16-18 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,13 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/25/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to amendments filed 04/29/2010. Claims 1, 3-4, 9-11, 14-15, 19 and 22-50 are cancelled. Claims 2, 12-13, 16, 18 and 20 have been amended. Claims 2, 5-8, 12-13, 16-18 and 20-21 are pending with claims 5-8, 12, 16-18 and 20 withdrawn from consideration, leaving claims 2, 13 and 21 currently being examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carl et al. (US 2005/0168437) in view of Geshwind (US 6,590,573).

In reference to claim 2, Carl teaches a three-dimensional pointing method, comprising: pointing at a desired point in a virtual three-dimensional space represented on a display apparatus based on two-dimensional coordinates on a predetermined detection plane of the display apparatus of a position that is pointed at by a pen tip of an input pen in a real three-dimensional space, (Carl, Fig. 5; pg. 6, par. 66),

an inclination angle that is an angle between an axis of the input pen and the detection plane in the real three-dimensional space (Carl, Fig. 5; pg. 2, par. 12),

and a direction angle that is an angle between a projection of the axis of the input pen onto the detection plane and a predetermined line on the detection plane (Carl, Fig. 5; pg. 2, par. 12, 13; pg. 6, par. 66);

generating an extension of the axis of the input pen in the virtual three-dimensional space based on the inclination angle and the direction angle of the input pen in the real three-dimensional space (Carl, Fig. 5; pg. 2, par. 12, 13; pg. 6, par. 66).

Carl however fails to teach pen pressure that is pressure applied to the pen tip of an input pen, displaying a three-dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space; and changing a coordinate of the three-dimensional pointer in the direction of the extension in the virtual three-dimensional space according to the pen pressure of the input pen,

and displaying the three-dimensional pointer on the display apparatus based on the changed coordinate.

Geshwind discloses a display system and method for creating three-dimensional image information, analogous in art with that of Carl, comprising pen pressure that is pressure applied to the pen tip of an input pen (Geshwind, col. 7, ll. 62-63),

displaying a three-dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space (Geshwind, col. 7, ll. 51-63; col. 16, ll. 63-67);

and changing a coordinate of the three-dimensional pointer in the direction of the extension in the virtual three-dimensional space according to the pen pressure of the input pen, and displaying the three-dimensional pointer on the display apparatus based on the changed coordinate (Geshwind, col. 7, ll. 51-63).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the three-dimensional pointing method of Carl to comprise pen pressure that is pressure applied to the pen tip of an input pen, displaying a three-dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space; and changing a coordinate of the three-dimensional pointer in the direction of the extension in the virtual three-dimensional space according to the pen pressure of the input pen, and displaying the three-dimensional pointer on the display apparatus based on the changed coordinate, as taught by Geshwind.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been combining prior art elements, pen pressure as z axis input information, according to known methods to yield predictable results, namely, an interactive computer system for creating three-dimensional image information and for converting two-dimensional image information for three-dimensional display systems (Geshwind, col. 1, ll. 23-28).

In reference to claim 13, Carl teaches a three-dimensional pointing apparatus (Carl, Fig. 5; pg. 6, par. 66), comprising:

an input information obtaining unit configured to obtain information of two-dimensional coordinates of a position that is pointed at by a pen tip of an input pen in a real three-dimensional space (Carl, Abstract; Fig. 5; pg.6, par. 66);

a pointer position/rotation angle calculation unit configured to calculate a position and a rotation angle of the pointer to be generated based on the information obtained by the input information obtaining unit (Carl, Fig. 5; pg. 2, par. 12, 13; pg. 6, par. 66),

in addition to the information of the two-dimensional coordinates, the input information obtaining unit obtains an inclination angle that is an angle between an axis of the pen and a detection plane (Carl, Fig. 5; pg. 2, par. 12, 13; pg. 6, par. 66),

and a direction angle that is an angle between a projection of the axis of the input pen onto the detection plane and a predetermined line on the detection plane (Carl, Fig. 5; pg. 2, par. 12, 13; pg. 6, par. 66).

Carl however fails to teach the three-dimensional pointing apparatus comprising: a display apparatus to represent a generated pointer at a desired point in a virtual three-dimensional space; the input information obtaining unit obtaining information on a predetermined plane of the display apparatus and configured to obtain information on a pen pressure, which is pressure applied to the pen tip of the input pen; to be displayed in the virtual three-dimensional space represented on the display apparatus; a pointing determination unit configured to determine whether there is an object that is pointed at by the pointer generated by the pointer generation unit in the virtual three-dimensional space represented on the display apparatus; an object generation unit configured to generate the object to be displayed in the virtual three-dimensional space represented on the display apparatus; a display control unit configured to display the pointer generated by the pointer generation unit and the object generated by the object generation unit in the three-dimensional space represented on the display apparatus; calculation according to the pen pressure of the input pen in the calculation; wherein the pointer position/rotation angle calculation unit changes a depth direction coordinate of the three-dimensional pointer to be displayed in the virtual three-dimensional space, sets a position of a three-dimensional pointer to be on the extension in the three-dimensional space, and performs the calculation by changing a coordinate of the three-dimensional pointer in the direction of the extension in the three-dimensional space.

Geshwind discloses a display system for creating three-dimensional image information, analogous in art with that of Carl, comprising: a display apparatus to

represent a generated pointer at a desired point in a virtual three-dimensional space (Geshwind, col. 7, ll. 51-63),

comprising: an input information obtaining unit configured to obtain information on a predetermined plane of the display apparatus (Geshwind, col. 2, ll. 10-17; col. 4, ll. 11-22) and a pen pressure, which is pressure applied to the pen tip of the input pen Geshwind, col. 7, ll. 51-63);

to be displayed in the virtual three-dimensional space represented on the display apparatus (Geshwind, col. 7, ll. 51-63);

a pointing determination unit configured to determine whether there is an object that is pointed at by the pointer generated by the pointer generation unit in the virtual three-dimensional space represented on the display apparatus (Geshwind, col. 14, ll. 2-31; col. 14, ll. 66-col. 15, ll. 12);

an object generation unit configured to generate the object to be displayed in the virtual three-dimensional space represented on the display apparatus (Geshwind, col. 4, ll. 23-35; col. 7, ll. 51-63);

a display control unit configured to display the pointer generated by the pointer generation unit and the object generated by the object generation unit in the three-dimensional space represented on the display apparatus (Geshwind, col. 4, ll. 23-35; col. 7, ll. 51-63);

calculation according to the pen pressure of the input pen in the calculation (Geshwind, col. 7, ll. 51-63);

wherein the pointer position/rotation angle calculation unit changes a depth direction coordinate of the three-dimensional pointer to be displayed in the virtual three-dimensional space (Geshwind, col. 7, ll. 51-63; col. 16, ll. 63-67),

sets a position of a three-dimensional pointer to be on the extension in the three-dimensional space (Geshwind, col. 7, ll. 51-63; col. 16, ll. 63-67),

and performs the calculation by changing a coordinate of the three-dimensional pointer in the direction of the extension in the three-dimensional space (Geshwind, col. 7, ll. 51-63; col. 16, ll. 63-67).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the three-dimensional pointing apparatus of Carl, to comprise a display apparatus to represent a generated pointer at a desired point in a virtual three-dimensional space; an input information obtaining unit configured to obtain information on a predetermined plane of the display apparatus and a pen pressure, which is pressure applied to the pen tip of the input pen; to be displayed in the virtual three-dimensional space represented on the display apparatus; a pointing determination unit configured to determine whether there is an object that is pointed at by the pointer generated by the pointer generation unit in the virtual three-dimensional space represented on the display apparatus; an object generation unit configured to generate the object to be displayed in the virtual three-dimensional space represented on the display apparatus; a display control unit configured to display the pointer generated by the pointer generation unit and the object generated by the object generation unit in the three-dimensional space represented on the display apparatus; calculation according to

the pen pressure of the input pen in the calculation; wherein the pointer position/rotation angle calculation unit changes a depth direction coordinate of the three-dimensional pointer to be displayed in the virtual three-dimensional space, sets a position of a three-dimensional pointer to be on the extension in the three-dimensional space, and performs the calculation by changing a coordinate of the three-dimensional pointer in the direction of the extension in the three-dimensional space, as taught by Geshwind.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been the well known use of a graphic arts input pen with a variable pressure tip in order to specify depth (Geshwind, col. 7, ll. 50-67), and to enable a graphic artist to use the angle or tilt on an input pen for 3-D modeling or sculpting (Geshwind, col. 25, ll. 1-8).

Claim 21 is rejected as being dependent on rejected claim 13 as discussed above and further, Carl modified by Geshwind teaches a computer readable storage medium including three-dimensional pointing instructions for causing a computer to execute processes in each unit of the three-dimensional pointing apparatus as claimed in claim 13 (Carl, pg. 2, par. 17; pg. 3, par. 83).

Response to Arguments

As to independent claims 2 and 13, applicants argue on pages 8-10 of applicant's response that the cited prior art of record fails to teach "displaying a three-

dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space".

Geshwind teaches displaying a three-dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space (Geshwind, col. 7, ll. 51-63; col. 16, ll. 63-67).

Geshwind discloses a three-dimensional pointer and display for user input wherein a cursor, as a pointer, is displayed in the Z axis as well as the X and Y axis (Geshwind, col. 16, ll. 63-67), based on the extension of the axis of the input pen. Geshwind further discloses a paint brush, as a pointer, wherein the brush position and size, along the Z axis would be displayed as a cursor positional in all three dimensions (Geshwind, col. 7, ll. 51-63).

Therefore, Geshwind teaches displaying a three-dimensional pointer on the display apparatus on the extension of the axis of the input pen in the virtual three-dimensional space.

Applicants argue on page 9 of applicants response that the cited prior art, Carl, is "silent regarding generating an extension of an axis the implement into a virtual three-dimensional space as required by claim 1". Claim 1, however, was canceled before the previous non-final Office Action, and the comment is not fully understood by the examiner. However, Carl teaches generating an extension of an axis of an input pen into three-dimensional space, as shown in Figs. 1, 2A, 2B, 2C, 4, 5, 6 and 7. Applicants argue that Carl does not describe a display apparatus and a virtual three-dimensional

space. Carl teaches a display apparatus and a virtual three-dimensional space, as in Figs. 7 and 9.

Applicants further argue that Geshwind "merely describes a mouse with a second ball which enables input on a third axis", a "*virtual* pen by twisting the mouse", and that Geshwind is silent regarding generating an extension of the axis of an input pen in a virtual three-dimensional space based on an inclination angle and a direction angle. Geshwind, however, discloses a system for creating three-dimensional images comprising a pen with variable pressure tip used to specify depth (Geshwind, col. 7, ll. 51-63), and generating an extension of the axis of an input pen in a virtual three-dimensional space based on an inclination angle and a direction angle by displaying a cursor position and size, positionable in all three dimensions, along the Z axis as well as along the X and Y axis (Geshwind, col. 7, ll. 51-63).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES HICKS whose telephone number is 571-270-7535. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629